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REPORT OF THE COMMITTEE ON TUNGSTEN ON ITS TWENTY-FIRST SESSION

Held at the Palais des Nations, Geneva,
from 4 to 8 December 1989

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INTRODUCTION

1. The twenty-first session of the Committee on Tungsten was held at the Palais des Nations, Geneva, from 4 to 8 December 1989. In the course of its session the Committee held five plenary meetings.

2. The Sessional Working Group of the Committee met from 4 to 6 December and held four meetings.

Opening statement

3. The Officer-in-Charge of the Commodities Division said that the tungsten market was characterized by wide price fluctuations, in conjunction with periods of scarcity and over-supply. Although prices had improved since their collapse in 1985 and 1986, they were still barely more than a third of those prevailing at the beginning of the 1980s, and tungsten mining remained depressed in the majority of producing countries. He called the attention of the Committee to the increased protectionist pressures faced by the world tungsten economy, pointing out that those developments needed further analysis in the deliberations of the Committee, including the identification of specific issues which the Committee needed to address in its future work. He also recalled that improvement of tungsten statistics was a continuing goal, and while some improvements had been achieved, there were still major gaps, particularly with respect to statistics on intermediate products, including their production, consumption and trade. With respect to the organization of the Committee's work and making better use of industry experts, he suggested that it might be worth setting up separate subgroups during Committee sessions to allow specialists to concentrate solely on their areas of expertise.

READEX

Chapter I

GENERAL STATEMENTS

4. The representative of France said that in 1989, the French economy had continued to grow at the same pace as in 1988. GDP was expected to rise by 3.5 per cent in 1989 and 3 per cent in 1990, which would lead to high levels of investment and consumption. The tungsten market in France had recovered considerably in 1988, mainly due to the better performance of the steel industry in general and the metals industry in particular. His country no longer produced either ferro-tungsten or ammonium paratungstate (APT). As a result, there were no longer any imports of tungsten concentrates, but imports of ferro-tungsten and APT had been increasing. Consumption of primary tungsten by the steel industry, particularly for the production of special steel products, had been increasing since 1986. Production of tungsten powders had been improving since 1984 and was expected to stabilize in 1989. Finally, the French export and import balance for tungsten powder in 1988 would remain slightly in deficit for the second consecutive year.

5. The representative of the United States of America said that, in his country, total domestic tungsten demand in 1989 was expected to be about 22.2 million pounds, or 9 per cent below the level of 1988. Despite the higher levels of United States production and consumption of intermediate tungsten products in 1988-1989, United States mine production remained far below the output levels achieved during the years before the 1982-1983 recession. Depressed prices had caused almost all United States tungsten mines to remain closed in 1989. The average price of tungsten concentrate in 1989 had remained at very low levels and below the unit production costs of almost all United States tungsten mining firms. Although prices of APT had slipped in 1989, prices of tungsten metal powder and tungsten carbide powder remained stable. He noted that a salient trend in the United States tungsten market had been the large overall increase in tungsten imports from China, despite the restrictions in the Orderly Marketing Agreement on APT and tungsten acid. Regarding the outlook for 1990, demand for tungsten and tungsten-based products in the United States was expected to decrease slightly from 1989 levels. United States exporters of tungsten products expected to face more competitive markets in 1990 due to the lagged effects of the 1989 dollar appreciation.

6. The representative of Canada informed the Committee that no mine production of tungsten had been recorded in his country since 1986, when low prices had forced the closure of its only producer. Canadian consumption of tungsten, mainly as intermediate products, had been 386 tons in 1988, and this level was expected to be maintained in 1989-1990, reflecting the anticipated continuing high level of exploration and development in Canada's mining industry. Growth in Canada's mining industry had been exceptionally strong, exceeding the total economy's growth rate from 1986 through 1989. From 1987 to 1989, demand for tungsten-containing diamond-drill bits and percussion-drill bits had been very high in mineral exploration work.

7. The representative of Sweden said that his country remained an important consumer of tungsten. More than two thirds of Swedish tungsten consumption was accounted for by the cemented carbide sector, and the remainder was attributable to the steel industry. Both industries were highly dependent on

exports. Swedish production of tungsten ores and concentrates had been confined to one scheelite mine only, the Yxsjöberg mine, which had been closed down in June 1989, partly due to unfavourable developments in market prices in recent years. The mine's production in 1988 had amounted to about 325 metric tons of tungsten content. An output of about 180 metric tons had been reached in 1989. Swedish consumption of ores and concentrates had amounted to about 550 metric tons in 1988, a level which was expected to remain fairly stable in 1989 and 1990. He noted, however, that consumption had recently shifted from primary products to intermediate products, mainly APT. Total consumption of ores and concentrates and intermediate products in 1988 had reached about 2,000 metric tons, and no major change was foreseen for 1989 and 1990.

8. The representative of the International Tungsten Industry Association (ITIA) said that the lack of transparency due to the lack of statistics created difficulties for the assessment of the market situation in a number of areas. In this regard, he noted the dominant position of China in the tungsten market and for the materials increasingly traded in the form of intermediate products. ITIA was currently collecting more detailed statistics on production, consumption and stocks of intermediate products. With regard to mine production, in 1988 the market-economy countries had exported about 5,500 tonnes of concentrate, while China had exported over 15,000 tonnes. As China had also apparently exported over 12,000 tonnes of intermediate products, and assuming a domestic consumption of some 3,000 tonnes, China should have at least 30,000 tonnes of concentrate available. What China was producing or supplying from stocks was not known. If reports in the trade press (including China's own press) about production problems were correct, then material might be coming from stocks, the size of which was difficult to ascertain. He also referred to China's exports of concentrates to Eastern European countries, estimated at about 9,000 metric tons per annum. He noted that, a year previously, the wolframite price had been $US 55-62 per m.t.u. but now stood at $US 44-60 per m.t.u.; the corresponding scheelite prices were $US 54-66 per m.t.u. and $US 56-72 per m.t.u. respectively. In so far as 1989 was concerned, demand was maintaining the impetus gathered in 1988, and supplies were available to meet it. Despite a reiteration of target price levels by net exporting countries at a governmental meeting in October 1989, the wolframite price in particular continued to fall.

9. The representative of Australia said that the Australian tungsten industry had contracted its production by over 60 per cent during the current decade, from 3,561 tons in 1980 to about 1,500 tons in 1989. As a result of the poor state of the market, the Australian tungsten industry at present consisted of only two producers, although the country had substantial economic reserves of tungsten. He emphasized that, during the 1980s, the value of Australia's tungsten exports had fallen in real terms by about 86 per cent. Australia no longer produced APT because it could buy lower-priced material overseas. Intermediate products were available at a price which implied virtually zero cost for processing. This situation drove the price of concentrates lower and lower and had distorted the market as demand had been diverted from concentrates to intermediates. Ferro-tungsten was a major cause of falling prices and market instability. The protracted problems of the tungsten industry had been examined at the sixth Meeting of Government Representatives of Tungsten Producing and Exporting Countries, held in October 1989 in Sydney, which had focused on fundamental issues of supply and

demand, as well as economic rationality in price relationships. The Meeting had agreed on a number of practical measures for implementation by individual countries. It had also addressed the issue of the general lack of transparency, which was getting worse due to the shift in trade from concentrates to intermediate products. He appealed for more glasnost in statistics, since that would make the discussions in the Committee on Tungsten more productive.

10. The representative of China said that 1988 had been a brisk year in world markets for non-ferrous metals, including tungsten. After some recovery in 1988 and at the beginning of 1989, the prices for tungsten concentrates and tungsten products had once again fallen, and China, as a major producer and exporter of tungsten, had suffered great losses from this declining market. The deterioration of the tungsten market was due to a number of factors, such as the lower consumption by traditional tungsten-consuming industries, the appreciation of the United States dollar vis-à-vis other major Western currencies, innovation in the technology for recovering tungsten and the development of substitutes, and the activities of brokers and government-owned stockpiles. It was unfair to shift the responsibility for the market instability onto one or two countries, and such an approach would not help improve the market situation. In that connection, in order to help achieve a stable international tungsten market, the Chinese Government had taken many initiatives to improve and strengthen the management and co-ordination of its tungsten exports. Since the foundation of the China Exporters' Chamber of Commerce on Tungsten Concentrates and Products in 1987, a system had been applied governing export licences and quotas for tungsten concentrates and APT, under which the China National Nonferrous Metals Import and Export Corporation and the China National Metals and Minerals Import and Export Corporation unified the implementation and management of tungsten exports. Measures for export control of ferro-tungsten were also under serious consideration. Although measures taken by China had played a positive role, a fundamental improvement of the market would require concerted efforts from all tungsten producing and consuming countries rather than from just a couple of countries. In this respect, it was the firm belief of China that the negotiation and conclusion of an international tungsten agreement would be conducive to effective stabilization of the market. Finally, he pointed out that the representative of a non-governmental organization, in his status as an observer to the Committee, had failed to present an overall and scientific analysis of the tungsten market situation based on relevant facts. Employing inaccurate figures, the NGO representative had simply used the Committee, an intergovernmental forum, to launch unwarranted charges against a sovereign State. This was totally unacceptable to the Chinese delegation, and he hoped it would not be repeated in the future.

11. The representative of Japan said that the major causes of price falls included low-priced Chinese tungsten ores and concentrates, as well as intermediate materials such as ferro-tungsten and ammonium paratungstate. However, the price of wolframite had gradually recovered to the level of $US 59.25 and $US 57.50 per m.t.u. in December 1988 and June 1989 respectively. Japanese domestic mine production had tended to level off owing to stabilization of consumption under the influence of the recent strong economic performance and signs of market upturns. In 1988, domestic production of ores and concentrates had reached 438 metric tons (gross base), up by 2 per cent as compared with the preceding year. Japanese imports

in 1988 had amounted to 2,785 metric tons, an increase of some 44 per cent from the preceding year. Domestic consumption of ores and concentrates had reached 3,300 metric tons (gross base), a decrease of some 11 per cent from the preceding year. Domestic consumption of tungsten metal, however, had increased by some 27 per cent from the preceding year to 4,306 metric tons. This increase was regarded as an effective result of domestic demand promotion measures. With regard to the consumption of tungsten metal used for cemented carbide tools, from the third quarter of 1986 to the second quarter of 1987, average quarterly consumption had been 500 metric tons. However, consumption had recovered to a level of 600 metric tons during the third quarter of 1987, and it was expected to reach the unprecedented level of 800 metric tons in the fourth quarter of 1989. In view of the increased demand, production of tungsten metal in 1989 was expected to reach some 3,140 metric tons, an increase of 6.6 per cent over the preceding year. The situation with regard to recycling was not very clear, because statistics were not available. As regards substitution of tungsten, the use of cermets was increasing in Japan and in 1988 had accounted for nearly 30 per cent of all throw-away chips and had almost equalled the share of tungsten carbide products. As far as special steel was concerned, molybdenum had become a major substitute material, while nickel was a rival material in heat and corrosion-resistant applications.

12. The representative of the Federal Republic of Germany said that his country was in its seventh successive year of expansion and that the national economy had not been so dynamic since the 1970s. The favourable overall conditions were also reflected in the state of the non-ferrous metals industry, and tungsten consumption had benefited from the general situation. While the metalworking industries and other tungsten users probably appreciated the low tungsten prices, he expressed concern about the fact that the European Community was buying about 70 per cent of its imports of concentrates, APT and tungsten oxide from one producing country. His country was very much in favour of free trade, and as a sizeable consumer and importer of tungsten, it was for safe supplies, stable prices and good service. The market prices for all tungsten products should give all partners a reasonable margin for profit, and they should not endanger future suppliers or cause producers to disappear from the market, as had happened with ferro-tungsten where for almost five years the tungsten content had been cheaper than the tungsten in concentrates.

13. The representative of the Republic of Korea said that, as a result of the continuing low world market prices, mine production in his country in 1989 was likely to be about 1,500 metric tons tungsten content, sharply lower than the previous year's figure of 1,825 metric tons. Only one mine was still in operation in his country, since all other smaller mines had closed down a couple of years previously. A further cut-back seemed inevitable in 1990 unless there was a remarkable improvement in market conditions. Mine production for 1990 was now forecast at about 1,200 metric tons tungsten content, a further 16 per cent reduction in relation to 1989. Domestic demand in 1989 would be more than 500 metric tons tungsten content, with a further increase expected in 1990 in view of the growing demand, especially for cemented tungsten carbides, in the automobile, electronics and heavy industries. As local demand was growing annually and mine production was declining, no scheelite concentrates had been available for export since the second half of 1988, and the availability of intermediates and downstream products for export was expected to decrease further in 1990. Overall

consumption of tungsten concentrates in 1989 and 1990 was expected to remain stable at around 2,000 metric tons tungsten content, and the shortage of raw materials for processing into downstream products meant that his country was turning into an importer of tungsten concentrates.

14. The representative of the United Kingdom said that her country's economy had now had eight successive years of growth, with manufacturing output rising by 7 per cent in 1988 and standing 3 per cent higher in the third quarter of 1989 than a year earlier. Investment had reached a record level in 1988, increasing by 13 per cent, and this growth had continued into 1989. The tungsten industry was becoming ever more efficient and innovative, but the increasing use of cermets, ceramics and coated carbides exerted a constant negative influence on its overall rate of growth. The availability of cheaper sources of material had enabled integrated producers in the United Kingdom to continue to be competitive, but the long-term effect of cheaper sources of material remained a concern for converters. The market for cemented carbides was currently steady at the 1988 level, and it was anticipated that the same level would continue into 1990. However, there was concern regarding lack of investment in the industry.

15. The representative of Portugal said that, since 1986, only one mine had been operating in his country, because all the others had been forced to suspend their activities. In order to examine the economic conditions necessary for the re-opening of these mines, the Portuguese Government, in collaboration with the Commission of the European Community, was undertaking a study to evaluate actual tungsten reserves. Portuguese tungsten production had declined to 1,209 tons in 1987 but had levelled off at 1,381 tons in 1988, and that level was expected to be maintained in 1989 and 1990. Production of intermediate products and ferro-tungsten had ceased for a number of reasons, including depressed international prices. He noted, however, that despite the current high level of demand, tungsten prices continued to drop. As the only country in the European Community to produce tungsten, Portugal had been following and supporting all initiatives aimed at the improvement of tungsten market conditions. His country had thus supported the initiative of the European Community to start an anti-dumping procedure against imports of tungsten products, particularly concentrates, from China. He expressed the hope that, during the present session of the Committee, better statistics and other information would be provided to help improve market transparency.

16. The representative of Italy said that his country was the smallest importer of tungsten among the industrialized countries. Imports of tungsten ore and concentrates in 1988 had stood at about 100 tons of tungsten products with a total value of $US 19 million. Economic conditions in Italy had been favourable from 1985 to 1989, and the market for tungsten carbides and ferro-tungsten had improved by more than 5 per cent per year, a trend which was likely to be maintained in 1990 and beyond. Tungsten consumption was expected to remain high in the automobile and petroleum and gas drilling sectors.

17. The representative of Peru said that, as a result of depressed tungsten prices during the period 1984-1987, many tungsten mines throughout the world had been closed down, and production of tungsten concentrates had declined from 20,792 tons in 1984 to 10,106 tons in 1988. In Peru, all mines had ceased operations, with the exception of one mine which was still working but

at a heavy loss; in 1988, the Regina mine had produced 426 tons. She stressed the need for sales of concentrates - and in particular payment instalments - to follow the usual market practices so as to allow healthy competition to take place. Regarding the current market situation, she stated her concern about the low level of prices and expressed the hope that the outcome of the meeting of producing and exporting countries, held recently in Sydney, would have positive results for the tungsten market. However, joint action by producers and consumers was necessary in order to stabilize the market.

Chapter II

DISCUSSIONS OF THE SESSIONAL WORKING GROUP

(Agenda item 3)

(a) Examination of statistics provided by the secretariat

18. Under this sub-item, the UNCTAD secretariat indicated that statistical information for the Sessional Working Group was provided in documents TD/B/C.1/TUNGSTEN/STAT/L.56, UNCTAD/DDM/MISC.15 and UNCTAD/DDM/MISC.16/Rev.1. Presenting these documents, the representative of the secretariat invited delegations to update and complete the statistics, as well as to comment on the secretariat estimates with a view to improving their quality. (For updated statistics on production, consumption, trade and stocks of ores and concentrates, see annex II.)

19. Several representatives noted the improvements which had been made recently in the secretariat's publications and provided comments on a number of areas where efforts were still needed to improve the quality of the statistics available to the Committee. In this respect, it was noted that a substantial volume of production and consumption was still based on estimates, some of which were questionable. Some representatives also noted the importance of accurate estimates, as inaccuracy could lead to an incorrect assessment of the market situation. However, it was noted that improvements in the accuracy of estimates could only be achieved if the countries concerned supplied the secretariat with the necessary statistics.

20. The representative of China indicated that his country published export statistics, which were supplied to the secretariat, but that other statistics were not currently published.

21. The representative of the USSR noted that his country supplied trade statistics on lead and zinc in the relevant study groups and also intended to do so with regard to nickel, copper and tin. He expressed the hope that his country could also provide statistics on tungsten in the future.

22. Comments were also made with respect to table F in document UNCTAD/DDM/MISC.16/Rev.1 regarding statistics on tungsten mine capacities by country. The representative of the United States noted that, while he fully appreciated the value of such statistics, caution was needed as regards the definition of processing and mine capacity. At the request of the Committee, he provided the secretariat with the capacity definition currently being used by the United States Bureau of Mines in preparing the Tungsten section of their Minerals Yearbook (see annex III). He drew attention to the differentiation made between definitions of "rated capacity", which was the maximum quantity of product that could be produced and which included operating and temporarily closed plants, and "effective capacity", which referred to the mines actually in operation. Several delegations commented on the issue, and the UNCTAD secretariat was requested to prepare a paper, to be examined at the Committee's next session, containing a list of the different definitions and methodologies used in major tungsten-producing countries.

23. At the request of a number of delegations, the representative of the International Tungsten Industry Association gave a summary account of the press release of the sixth Meeting of Government Representatives of Tungsten Producing and Exporting Countries, held in Sydney between 4 and 6 October 1989. Following a review of the current market situation, the Meeting had expressed concern about a number of developments, including the failure of the tungsten industry to benefit from the general improvement in mineral commodity prices and the continued severe economic losses being incurred by tungsten producers. The main obstacle to higher prices for concentrate was identified as oversupply, and a further hindrance continued to be sales of key intermediate products at prices which did not reflect realistic conversion costs. A number of measures had been agreed at the meeting: all countries had accepted the need for producers/exporters to be responsible and economically rational in their production and marketing policies. Specifically, producers of both concentrates and intermediate products would try to introduce more realistic relationships between the costs of raw materials and their processing on the one hand and the price of intermediate products on the other. Further, all producers, on an individual basis, would carefully examine their sales policies to ensure that price and supply were co-ordinated, as higher prices could not be achieved and maintained if supplies were regularly increased to meet all demand.

24. The Committee stressed the need to pursue efforts aimed at the improvement of market transparency, which could only be achieved with the full co-operation of States members of the Committee in providing more complete and comprehensive statistics on production, consumption and trade. It was recalled that, presently, it was extremely difficult to make a real assessment of the current market situation and the short-term outlook of the tungsten market, because more than 50 per cent of total world production was based on estimated data.

(b) Review of the current market situation and outlook

25. Under this sub-item, the representative of the UNCTAD secretariat presented the report on "Recent developments and short-term outlook in the tungsten market" (TD/B/C.1/TUNGSTEN/80). He emphasized that, during the period from 1988 to mid-1989, the strong performance of the world economy had led to greater activity in many tungsten-consuming industries such as the automative industry, the aero and aerospace industry, and the capital equipment and electronic industries, as well as some sectors of the mining industry. He noted, however, that despite the stronger demand and trade, the tungsten market had not benefited from any substantial improvement in prices. In addition, the activities of some major tungsten-consuming sectors like the automotive, construction and energy industries had more recently shown a slowdown. Given the current demand situation, the outlook could depend to a great extent on the supply side. It would be difficult to see any immediate improvement in the tungsten market given the large overhang of stock material and in the absence of effective measures to match supply and demand.

26. In the assessment of the current market situation and short-term outlook of the tungsten market, the Committee examined many factors which appeared to have influenced the demand and supply conditions contributing to the current situation in the tungsten market, where prices remained low notwithstanding mine shutdowns and reduced mine capacities. The current price was still lower

than that prevailing before the price collapse of 1985-1986 and less than half the price level of the early 1980s. It was noted that, at the current price level, many mines had to remain closed, and many of those still in operation faced the prospects of losses, with all the social problems and reduced earnings which that entailed.

27. Among the factors which drew attention were the over-abundant supply of tungsten materials, the low elasticity of demand for tungsten in many tungsten-consuming sectors, the competition for market shares between tungsten concentrates and intermediate products, the slowing down of demand in major tungsten-consuming industries, the appreciation of the United States dollar vis-à-vis other major Western currencies, the uncertainty created by increased protectionism, including the possibility of anti-dumping action by EEC countries, and the movements of stock materials. All those factors had in different ways contributed to the current market situation, and many of them were expected to continue influencing the market. Regarding stock movements, attention was focused on the changing structure of stocks, with more material being held in the form of intermediate products.

28. According to estimates, partly based on data submitted by delegations, consumption of ores and concentrates in 1989 was expected to decrease by 4.7 per cent to 44,046 metric tons. On the other hand, production of ores and concentrates was expected to be 43,704 metric tons, about the same level as in 1988. The preliminary estimates suggested that consumption and production were nearly in balance.

29. The general view appeared to be that demand was slowing down, following the rapid increase in 1988, as a result of the reduced level of economic activity in the major consuming countries. The economic slowdown was expected to continue in a number of countries in 1990. Under the circumstances, it therefore appeared that the market situation for tungsten would depend greatly on the supply side. If the market continued to be oversupplied with tungsten materials, including both concentrates and intermediate products, the current weak market situation was unlikely to improve.

30. In the circumstances, it appeared that the tungsten industry would experience little improvement, with the mining sector continuing to be affected by mine closures and domestic plant for intermediate products staying closed in a number of consuming countries. It also appeared that structural and technological changes, including substitution and technical progress such as better tool geometry, would continue to exert a negative influence on the demand for tungsten.

Guest speakers

31. At its twenty-first session, the Committee was addressed by two guest speakers, namely Ms. Moreno from Metal Bulletin in London (United Kingdom), and Professor Aronsson from CERMEP in Grenoble (France). The subjects addressed were, respectively, the pricing of tungsten in relation to recent market developments and substitution prospects.

32. In her presentation, the first speaker addressed, inter alia, the method used in establishing Metal Bulletin wolframite and scheelite quotations and their representativeness for "spot" transactions. Comments and questions

related, among other things, to the prospect of Metal Bulletin introducing a quotation to cover transactions in Chinese material, the implications for the tungsten market of China introducing a producer price, and the relationship between Metal Bulletin prices and the settlement price of Chinese contracts. The representative of China noted that the latter price had been maintained above the Metal Bulletin price. The speaker indicated that China had recently reduced its exports but that the anti-dumping discussion in the European Economic Community had led to speculative shipments to the EEC countries.

33. In commenting on the views expressed by the speaker from Metal Bulletin on the role of China in improving the tungsten market situation, the representative of China said experience with other commodities showed that the means of achieving fundamental and long-term stabilization of the market lay in effective international co-operation involving all countries. Efforts made by one or two countries could never work a miracle in this regard.

34. The second speaker discussed a number of issues highlighted in document TD/B/C.1/TUNGSTEN/81, prepared for the Committee's twenty-first session. He responded to a number of questions and comments on substitution, including the price sensitivity of substitution, the use of tungsten in new applications, research costs and product development for cermets, and the growth in the consumption of the latter materials.

Chapter III

REVIEW OF THE DISCUSSIONS, PROPOSALS AND WORK TO DATE ON THE QUESTION OF STABILIZING THE TUNGSTEN MARKET WITH A VIEW TO DETERMINING APPROPRIATE COURSES OF ACTION TO ENABLE THE GOVERNMENTS OF PRODUCING AND CONSUMING COUNTRIES TO BE IN A POSITION TO REACH AGREEMENT ON MEASURES TO STABILIZE THE TUNGSTEN MARKET AND TO ARRIVE AT AN EARLY DECISION ON THE CONVENING OF A NEGOTIATING CONFERENCE

(Agenda item 5)

35. Under this agenda item, the UNCTAD secretariat presented the outcome of the survey carried out on existing research and development programmes to promote new applications for tungsten. The Committee was informed that, following the request made at the previous session, the UNCTAD secretariat had sent a note to member States requesting the required information. The number of responses was very limited - only four countries had replied, namely Austria, Brazil, Turkey and Thailand. It therefore seemed that interest in the matter was limited, and the Committee would have to decide whether it wanted to pursue the work on research and development; if it did, it would need to define the scope of the review and survey to be conducted. In this regard, the secretariat suggested that the best way to fulfil this objective would be through a questionnaire, which would serve as a guideline to respondents. The secretariat proposed that if the Committee agreed, a draft questionnaire on this matter could be circulated for consideration.

36. While some delegations supported the proposal concerning the questionnaire, a number of representatives (the United States and the European Economic Community) expressed scepticism about questionnaires for gathering information on technological issues and proposed other ways, for example seminars. In this context, the representative of the USSR said that his country was prepared to participate actively in the work of the Committee and to provide information on R & D and technical co-operation in the framework of UNCTAD. He stressed that the USSR was already providing foreign trade statistics in other minerals and metals commodity forums, and in the future his country intended to take a more active role in meetings. For the next session of the Committee on Tungsten, he hoped to have a representative of the Soviet tungsten industry in his delegation. He endorsed the proposal made concerning a general questionnaire for the research and development project, and his delegation was willing to provide the relevant information. Regarding tungsten consumption, total consumption of tungsten in his country in 1989 would be the same as in recent years, although Soviet industry was undergoing important structural change, including the process of conversion in the country's defence industry.

37. The representative of Australia indicated that the draft questionnaire might give rise to some problems. He therefore suggested that the secretariat should allow member Governments to consider the draft questionnaire and to suggest improvements.

38. The Committee agreed to proceed according to the suggestion made by the representative of Australia and requested the secretariat to seek comments in writing from member States on the draft text of the questionnaire so that the

secretariat could proceed with its work in terms of collecting the information and carrying out its analysis. (For the text of the draft questionnaire, see annex IV.)

39. Referring to measures for stabilizing the tungsten market, the representative of China said that his country was willing to make joint efforts to reach a solution which would serve the interests of both producing and consuming countries. His proposal was to reach an international commodity agreement for tungsten, as an effective solution for the long-term stabilization of the tungsten market. He stressed that this agreement, once adopted, should have to be applied to all producers and consumers, and no country would be allowed to go counter to it. Collective efforts on the part of producers and consumers would therefore be required. Such a proposal, aimed at fixing a reasonable price for tungsten ores and concentrates and tungsten products, was suggested on the basis of a meeting held in Beijing, and it had also been discussed at the meeting of producers held in Sydney in October 1989. He concluded by inviting the UNCTAD secretariat to submit a draft text in the form of an "International Agreement" for the consideration of the States members of the Committee. The improvement of market transparency could only play an indirect role for market stabilization, but a final and long-term solution for the tungsten market remained with an international commodity agreement.

40. The representative of the United States said that he was surprised by the Chinese proposal. His country was strongly opposed to international commodity agreements. International co-operation in the form of study groups was useful, but the United States was not interested in pursuing commodity agreements.

41. The representative of Japan said that his country was against the idea of introducing Government intervention to stabilize the tungsten market, i.e. it was against the idea of an international commodity agreement for tungsten. The development of tungsten economies should be based on the free market activities of the private sector.

42. The representative of the United Kingdom said that her country was also strongly opposed to any international commodity agreement on tungsten.

43. The representative of Peru recalled the difficulties facing producing countries, particularly developing countries which were so dependent on exports of commodities. Developing countries could not diversify their economies, and the indebted ones in particular were in a very serious situation. The Committee had a role to play in terms of market transparency, but stabilization was the real goal. She drew the attention of the Committee to the fact that all proposals should be given due consideration. In that regard, the Chinese proposal for an international agreement was a positive contribution to advancing the work of the Committee.

44. The representative of France said that his country would consider any proposal. Ten years before in Manila, a meeting on tungsten had decided that international co-operation should be achieved in two phases: first, the establishment of a study group; second, the adoption of an international

commodity agreement. Since then, the market situation had changed completely, but the International Jute Agreement could serve as a good example for work in the field of tungsten.

45. The representative of the Federal Republic of Germany said that his country was not in a position to negotiate a commodity agreement for tungsten at the current session. Countries should adapt themselves to the free-market mechanism.

46. The representative of Sweden questioned the efficiency of commodity agreements as far as market stabilization was concerned. The improvement of market transparency was a more realistic goal.

47. The representative of Australia reiterated the position taken by his country at previous meetings, rejecting the proposal for a commodity agreement. He also referred to the outcome of the producers' meeting held in Sydney.

48. The representative of Mexico said that his delegation supported all initiatives to advance international co-operation between producers and consumers, and in that regard it could consider all proposals, including those related to agreements involving economic clauses, if they responded to the interests of producers and consumers.

49. The representative of the European Economic Community said that maintaining item 5 on the Committee's agenda was a question of good will. The Chinese proposal regarded the activities of the Committee as having only an indirect effect on market stability. In his view it would seem more realistic to concentrate efforts on improving the work of the Committee on, for example, market transparency and research and development, rather than on reaching a consensus for the negotiation of an international agreement.

50. The representative of Portugal stressed that his country was open to any kind of dialogue and international co-operation, but it would reserve its position on the matter under discussion.

51. The representative of the Republic of Korea said that the introduction of a floor price, production quotas and tighter control for export quantities could contribute to the stabilization and improvement of the international tungsten market and prices. If the current price of tungsten concentrates persisted, the current fierce price competition for tungsten concentrates between suppliers would certainly be transferred to downstream products, causing a vicious circle. The Committee should therefore be open to any proposals for stabilizing the market.

52. The question was also addressed as to whether the wording of agenda item 5 was appropriate if it was to be included in the agenda for the Committee's next session. Many representatives were of the view that the wording of item 5 should be more dynamic and realistic. The representative of the United States proposed that the concept of market stabiiization be replaced by the concept of increasing transparency. That proposal was supported by the representative of the United Kingdom.

53. The representative of Peru noted discrepancies in the position taken by some delegations in respect of different commodities. For example, some delegations were against any intervention in the tungsten market but were for intervention in respect of agricultural commodities in GATT discussions. Under agenda item 5 on stabilization, which was of particular importance to her delegation, it was important to leave open the possibility for the Committee to consider all proposals coming from different members, without changing the title of the item.

54. The representative of China said that it was not the first time that his country had called for an international agreement on market stabilization with economic clauses, although it was always ready to consider any other forms of effective international co-operation. The Committee on Tungsten was an international forum, and any delegation could submit measures for consideration. His proposal made sense in the light of the success of the agreement on rubber. With regard to the wording of item 5 of the provisional agenda for the Committee's twenty-second session, he was opposed to the proposal to change it.

55. The representative of the European Economic Community proposed that agenda item 5 should read: "Review of the discussions, proposals and work to date on the question of increasing transparency in the tungsten market with a view to determining appropriate courses of action to enable the Governments of producing and consuming countries to be in a position to reach agreements on measures to stabilize the tungsten market". The proposal was supported by the United States, the United Kingdom and Japan. The representative of China said that his position on the question remained unchanged.

56. The representative of the United States noted that there had been a great deal of discussion regarding replacing the phrase "stabilizing the tungsten market" with the phrase "improving market transparency", and many delegations supported the EEC proposal to drop the reference to "and to arrive at an early decision on the convening of a negotiating conference". He encouraged other delegations to consider amending agenda item 5 at the next session of the Committee to reflect these suggestions.

57. The Committee agreed, as a compromise, to include item 5 unchanged in the agenda of the Committee's next session.

Chapter IV

OTHER BUSINESS

(Agenda item 6)

Question of the eligibility of the Committee on Tungsten as an international commodity body of the Common Fund for Commodities

58. Referring to the recent request of the Director-General of FAO to the Common Fund to designate some of its groups as international commodity bodies, the representative of Brazil said that it would be useful if the Committee on Tungsten also became an international commodity body so as to enable it to sponsor and follow up projects financed by the second window of the Common Fund. He therefore proposed that the Committee on Tungsten agree to invite the Secretary-General of UNCTAD to approach the Common Fund for Commodities with a view to seeking designation of the Committee on Tungsten as an international commodity body.

59. The representative of Portugal supported the proposal of the representative of Brazil.

60. In response to the proposal, a number of questions were raised relating, inter alia, to the timing of such a request, the eligibility of the Committee, and the criteria required to achieve such eligibility. A number of representatives, including the representatives of Australia, China, Japan, the United States and the European Economic Community, sought clarification from the secretariat.

61. The representative of the USSR said that, in principle, his country supported the idea contained in the proposal, and if necessary consultations should be conducted with the Common Fund for Commodities. However, a number of questions would need to be clarified.

62. The Officer-in-Charge of the Commodities Division said that the Director-General of FAO had already made his request and it would make sense to approach the Common Fund in connection with tungsten also. The Committee would not meet again until the end of the next year, which meant that the time was right to make such an approach. As regards criteria for eligibility, these were laid down in schedule C in the Agreement establishing the Common Fund. It would be on the basis of that schedule, in particular points 4 and 5, that the eligibility of the Committee would be scrutinized.

63. In response to comments concerning the status of the Committee on Tungsten, its terms of reference and its technical capabilities, the Officer-in-Charge of the Commodities Division said that he could not pre-empt the decision of the Common Fund as regards the eligibility of the Committee on Tungsten.

64. In view of the implications raised by the proposal, a number of representatives, including the representatives of Japan, the Federal Republic of Germany and France, indicated that they would have to consult their authorities before any formal decision could be taken. It was therefore suggested that the Common Fund could be approached informally.

65. The Committee therefore agreed to request the Secretary-General of UNCTAD to approach the Common Fund informally in order to seek its view on the eligibility of the Committee as an international commodity body. It also agreed to annex the draft decision submitted by Brazil to its report (see annex I) and to discuss the matter at its next session.

Organization of the work of the Committee

66. As regards the organization of the work of the Committee, the representative of Canada suggested that the Committee, in order to encourage the participation of industry advisers, should reduce the length of its session to three days, possibly organizing its session in conjunction with the meeting on iron ore. A number of delegations supported that suggestion.

67. The representative of China said that he also wished to improve the efficiency of the Committee's work, but three days would not always be enough to complete the Committee's work. The existing five-day timetable should be retained.

68. The Officer-in-Charge of the Commodities Division said that the meetings on tungsten and iron ore could be held back to back, with the meeting on tungsten being brought forward to coincide with the meeting on iron ore.

69. The Committee recommended to the Trade and Development Board that the meetings of the Committee on Tungsten and the Intergovernmental Group of Experts on Iron Ore be held in conjunction with each other. The Intergovernmental Group of Experts on Iron Ore could meet on the last three working days of one week, with the Committee on Tungsten meeting the following week for five days. Should the need arise, the report of the Intergovernmental Group of Experts on Iron Ore could be adopted during the second week, at a specially convened meeting.

Chapter V

STATEMENTS MADE AT THE COMMITTEE'S CLOSING PLENARY MEETING

70. The representative of the United States, referring to agenda item 6 and the question of the eligibility of the Committee on Tungsten as an international commodity body (ICB) of the Common Fund for Commodities (see paras. 58-65 above), said that the United States did not object to a relationship between the Committee on Tungsten and the Second Account of the Common Fund. However, should such a relationship be contemplated, the Committee should consider and agree on the form that the relationship should take and the type of project that should be undertaken. The Committee on Tungsten could have no relationships with the First Account of the Common Fund, and the UNCTAD secretariat, during its informal consultations with the Common Fund, should make it clear that a relationship was being contemplated only with the Second Account. The United States would not accept any new financial obligations regarding any project undertaken by the Committee, including any activities or projects arising from a relationship with the Common Fund.

71. In that connection, he asked the secretariat to confirm that the Committee, if designated as an ICB, would have a relationship only with the Second Fund.

72. The Legal Officer of the Commodities Division said it was clear from article 7 of the Agreement Establishing the Common Fund for Commodities that the First Account could be used only by International Commodity Organizations established to implement the provisions of ICAs providing for international buffer stocks. The Agreement envisaged that ICBs, for which the eligibility criteria were set out in Schedule C of the Agreement, would have access to the Second Account only, as provided for in Article 18 of the Agreement.

73. The representative of Peru, referring to agenda item 6 and the question of the Committee's eligibility as an international commodity body of the Common Fund, a point of particular importance to her delegation, said she welcomed the fact that the United States was not opposed to a relationship between the Committee and the Second Account of the Common Fund. With regard to the eligibility criteria set out in Schedule C of the Agreement Establishing the Common Fund, in her view it was clear that the Committee on Tungsten satisfied all the conditions set out therein. With respect to the question of financial implications, the final decision concerning the financing of any project which the Committee might sponsor would be taken by the Executive Board of the Common Fund. In the absence of a consensus, a two-thirds majority would be required to take any decision. The Committee on Tungsten would not itself finance projects. She hoped that the consultations of the Secretary-General of UNCTAD with the Common Fund would be fruitful. In

that connection, she considered that the best way of updating the work of the Committee, as had been stressed by several delegations under a different agenda item, was to participate in the process begun by the recent entry into force of the Common Fund.

74. The Chairman said that, during the Committee's session, progress had been made in a number of areas. Participation by industry advisers had been reasonably good, improvements had been made in respect of statistics, and the quality of the debate had been enhanced by the participation of the guest speakers. Of course, much remained to be done, but the spirit of co-operation within the Committee meant that future work could be viewed with confidence.

Chapter VI

ORGANIZATIONAL MATTERS

(a) Opening of the session

75. The twenty-first session of the Committee on Tungsten was opened on 4 December 1989 by Mr. K. Natsume (Japan), Vice-Chairman-cum-Rapporteur of the Committee at its twentieth session.

(b) Election of officers (agenda item 1)

76. At its 1st plenary meeting, on 4 December 1989, the Committee elected Mrs. Marie-Christine Colomb d'Ecotay (France) as its Chairman.

77. At its 2nd plenary meeting, on 4 December 1989, it elected Mr. Dong-Seok Min (Republic of Korea) as its Vice-Chairman-cum-Rapporteur.

78. As provided for in the terms of reference and operating procedures of the Sessional Working Group (TD/B/C.1/268), the officers of the Committee served as the officers of the Working Group.

(c) Adoption of the agenda (agenda item 2)

79. At its 1st plenary meeting, on 4 December 1989, the Committee adopted its provisional agenda (TD/B/C.1/TUNGSTEN/79), as follows:

1. Election of officers

2. Adoption of the agenda

3. Discussions of the Sessional Working Group:

   (a) Examination of statistics provided by the secretariat

   (b) Review of the current market situation and outlook

4. Consideration of the report of the Sessional Working Group

5. Review of the discussions, proposals and work to date on the question of stabilizing the tungsten market with a view to determining appropriate courses of action to enable the governments of producing and consuming countries to be in a position to reach agreement on measures to stabilize the tungsten market and to arrive at an early decision on the convening of a negotiating conference

6. Other business

7. Adoption of the report of the Committee to the Committee on Commodities.

(d) Representation */

80. The following States members of UNCTAD members of the Committee were represented at the session: Australia; Austria; Belgium; Bolivia; Brazil; Canada; China; France; Germany, Federal Republic of; Italy; Japan; Mexico; Netherlands; Peru; Poland; Portugal; Republic of Korea; Spain; Sweden; Thailand; Turkey; Union of Soviet Socialist Republics; United Kingdom of Great Britain and Northern Ireland; United States of America.

81. The following other States members of UNCTAD, not members of the Committee, were represented at the session: Afghanistan; Finland; Norway; Philippines.

82. The following specialized and related agencies were represented at the session: International Labour Organisation; International Monetary Fund. The General Agreement on Tariffs and Trade was also represented.

83. The following intergovernmental organization was represented at the session: European Economic Community.

84. The following non-governmental organization was represented at the session: Special Category: International Tungsten Industry Association.

(e) Consideration of the report of the Sessional Working Group (agenda item 4)

85. At its closing plenary meeting, on 8 December 1989, the Committee adopted the report of the Sessional Working Group (TD/B/C.1/TUNGSTEN/L.21/Add.1), with some amendments.

(f) Adoption of the report of the Committee to the Committee on Commodities (agenda item 7)

86. At the same meeting, the Committee adopted its draft report (TD/B/C.1/TUNGSTEN/L.21 and Add.1 and 2), as amended, and authorized the Rapporteur to complete the final text, as appropriate.

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*/ For the list of participants, see document TD/B/C.1/TUNGSTEN/INF.15.

Annex I

DEVELOPMENT MEASURES

Draft decision submitted by Brazil under agenda item 6 a/

The Committee on Tungsten,

Agrees to invite the Secretary-General of UNCTAD to approach the Common Fund for Commodities with a view to seeking designation of the Committee on Tungsten as an International Commodity Body.

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a/ See para. 65 above.

Annex II

STATISTICAL TABLES

Table 1

Data summary: the current situation and outlook with respect to tungsten ores and concentrates

(Metric tons of contained tungsten)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989 a/
Production	52112	50670	48022	42962	50740	49441	46285	41546	43995	44000
Consumption	49289	47305	40189	40175	47815	45297	42935	44182	45762	45000
Imports	28225	27432	22844	20956	26931	25134	21398	21019	25984	24000
Exports	31950	27886	25907	26246	26513	27079	23782	22923	24194	24000

Source: Based on tungsten statistics of the Committee on Tungsten.

a/ Estimates, partly based on data provided by delegations.

Table 2

PRODUCTION OF TUNGSTEN IN ORES AND CONCENTRATES

(Metric tons of W content)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
WORLD.....	52112.0	50670.0	48038.0	42980.0	50763.0	49239.0	46264.0	40980.0	43724.0	43704.0	..
DEVELOPED MARKET ECONOMY COUNTRIES...	14607.0	14080.0	12213.0	8248.0	12142.0	11388.0	9027.0	4322.0	5124.0E	5283.0E	..
AMERICA.....	5932.0	5657.0	4459.0	1308.0	4918.0	4001.0	2053.0	34.0	230.0E	450.0E	..
Canada.....	3178.0	2052.0	2938.0	328.0	3715.0	3005.0	1273.0	0.0	0.0	0.0E	0.0E
United States.....	2754.0	3605.0	1521.0	980.0	1203.0	996.0	780.0	34.0	230.0E	450.0E	..
EUROPE.....	4498.0	4293.0	4380.0	4269.0	4837.0	4846.0	4821.0	2873.0	3293.0	3130.0E	..
EEC.....	2676.0	2478.0	2641.0	2496.0	2820.0	2963.0	3077.0	1289.0	1461.0	1450.0E	..
France.....	577.0	591.0	726.0	793.0	742.0	735.0	937.0	0.0	0.0	0.0E	0.0E
Portugal.....	1580.0	1396.0	1359.0	1182.0	1509.0	1766.0	1657.0	1209.0	1381.0	1370.0E	1370.0E
Spain.....	451.0	441.0	556.0	521.0	569.0	462.0	483.0	80.0	80.0	80.0E	..
United Kingdom...	68.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0E	0.0E
EFTA.....	1822.0	1815.0	1755.0	1773.0	2017.0	1883.0	1744.0	1584.0	1832.0E	1680.0E	..
Austria.....	1495.0	1450.0	1406.0	1408.0	1632.0	1481.0	1387.0	1250.0E	1507.0	1500.0E	..
Sweden.....	327.0	365.0	349.0	365.0	385.0	402.0	357.0	334.0	325.0	180.0E	..
ASIA.....	857.0R	787.0R	763.0R	605.0R	649.0	566.0	576.0	258.0	335.0	348.0E	..
Japan.....	857.0R	787.0R	763.0R	605.0R	649.0	566.0	576.0	258.0	335.0	348.0E	..
OCEANIA.....	3320.0	3343.0	2595.0	2066.0	1738.0	1975.0E	1577.0E	1157.0E	1266.0E	1355.0E	..
Australia.....	3316.0	3333.0	2588.0	2061.0	1733.0	1970.0	1572.0	1152.0	1261.0	1350.0E	..
New Zealand.....	4.0	10.0	7.0	5.0	5.0	5.0E	5.0E	5.0E	5.0E	5.0E	..
DEVELOPING COUNTRIES AND TERRITORIES.....	9925.0	10110.0	9645.0	8452.0	9071.0	8301.0	6687.0	5608.0	5550.0	5371.0E	..
AFRICA.....	696.0	489.0	528.0	308.0	370.0	199.0	46.0	26.0	26.0	30.0E	..
Namibia.....	150.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0E	..
Rwanda.....	366.0	281.0	322.0	231.0	291.0	167.0	13.0	0.0	0.0	0.0E	..
Uganda.....	18.0	18.0	18.0	18.0E	20.0E	4.0E	4.0E	4.0E	5.0E	5.0E	..
Zaire.....	72.0	136.0	136.0	44.0	30.0	18.0	27.0	21.0	20.0E	20.0E	..
Zimbabwe.....	90.0	54.0	52.0	15.0	29.0	10.0	2.0	1.0	1.0	5.0E	..
AMERICA.....	4398.0	4716.0	4688.0	4406.0	3954.0	3980.0	2932.0	1963.0	2429.0	2556.0E	..
Argentina.....	34.0	11.0	17.0	40.0	29.0	17.0	20.0	14.0	15.0	15.0E	..
Bolivia.....	2661.0	2778.0	2534.0	2490.0	1893.0	1643.0	1160.0	624.0	924.0	1078.0E	..
Brazil.....	875.0	1248.0	1365.0	1026.0	1101.0	1297.0	875.0	672.0	739.0	652.0E	..
Guatemala.....	0.0	..	40.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0E	..
Mexico.....	211.0	158.0	78.0	147.0	145.0	282.0	294.0	213.0	206.0	171.0E	
Peru.....	617.0	521.0	654.0	703.0	786.0	732.0	604.0	440.0E	545.0	640.0E	..
ASIA.....	4831.0	4905.0	4429.0	3738.0	4747.0	4122.0	3688.0	3619.0	3095.0E	2785.0E	..
India.....	23.0	20.0	28.0	16.0	29.0	28.0	23.0	26.0	19.0	15.0E	..
Malaysia.....	14.0	35.0	43.0	31.0	25.0	20.0	2.0	20.0E	0.0	0.0E	
Myanmar.....	476.0	825.0	844.0	930.0	1096.0	945.0	715.0	493.0	400.0E	400.0E	..
Republic of Korea.	2607.0	2742.0	2539.0	2101.0	2702.0	2370.0	2240.0	2180.0	1825.0	1500.0E	..
Thailand.....	1615.0	1210.0	856.0	563.0	742.0	585.0	512.0	702.0	651.0	670.0E	..
Turkey.....	96.0	73.0	119.0	97.0	153.0	174.0	196.0	198.0	200.0E	200.0E	..

Table 2 (continued)

PRODUCTION OF TUNGSTEN IN ORES AND CONCENTRATES

(Metric tons of W content)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
SOCIALIST COUNTRIES OF EASTERN EUROPE...	8880.0E	9280.0E	9480.0E	9780.0E	10050.0E	10050.0E	9050.0E	9050.0E	7550.0E	7550.0E	..
Czechoslovakia....	80.0E	80.0E	80.0E	80.0E	50.0E	50.0E	50.0E	50.0E	50.0E	50.0E	..
USSR.....	8800.0E	9200.0E	9400.0E	9700.0E	10000.0E	10000.0E	9000.0E	9000.0E	7500.0E	7500.0E	..
SOCIALIST COUNTRIES OF ASIA.....	18700.0E	17200.0E	16700.0E	16500.0E	19500.0E	19500.0E	21500.0E	22000.0E	25500.0E	25500.0E	..
China.....	15000.0E	13500.0E	13000.0	14000.0E	17000.0E	17000.0E	19000.0E	20000.0E	23000.0E	23000.0E	..
Democratic Peoples Republic of Korea.	2200.0E	2200.0E	2200.0E	1000.0E	1000.0E	1000.0E	1000.0E	500.0E	500.0E	500.0E	..
Mongolia.....	1500.0E	1500.0E	1500.0E	1500.0E	1500.0E	1500.0E	1500.0E	1500.0E	2000.0E	2000.0E	..

Sources: National statistics,questionnaires and data provided by delegations.

Notes: E Indicates estimates.
R Indicates revised data.

Table 3

CONSUMPTION OF TUNGSTEN IN ORES AND CONCENTRATES

(Metric tons of W content)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
WORLD.....	49289.0	47305.0	40189.0	40175.0	47815.0	45297.0	42915.0	45187.0	46231.0	44296.0	..
DEVELOPED MARKET ECONOMY COUNTRIES...	21746.0	19381.0	12579.0	13684.0	20249.0	17141.0	13795.0	14647.0	16485.0	14923.0E	..
AMERICA.....	9274.0	9839.0	4506.0	5181.0	8577.0	6838.0	4810.0	6271.0	8218.0	8010.0E	..
Canada.....	6.0	0.0	0.0	0.0	0.0	0.0	6.0	765.0	386.0	10.0E	..
United States.....	9268.0	9839.0	4506.0	5181.0	8577.0	6838.0	4804.0	5506.0	7832.0	8000.0E	..
EUROPE.....	9211.0	6944.0	5845.0	6131.0	8979.0	7321.0	6491.0	5805.0	5912.0	4950.0E	..
EEC.....	4735.0	3662.0	3547.0	3728.0	6118.0	4501.0	3636.0	3238.0	3262.0	2600.0E	..
Belgium-Lux.....	100.0E	9.0	9.0E	10.0	142.0	341.0	30.0	50.0E	50.0E	50.0E	..
France.....	841.0	663.0	653.0	520.0	815.0	808.0	677.0	269.0	34.0	0.0E	..
Germany,Federal Republic of.....	1499.0	1348.0	1541.0	2030.0	3934.0	2073.0	1720.0	1863.0	2144.0	2100.0E	..
Italy.....	90.0E	40.0E	40.0E	27.0	78.0	92.0	80.0	86.0	100.0E	100.0E	..
Netherlands.....	400.0E	400.0E	300.0E	300.0E	300.0E	400.0E	350.0E	300.0E	330.0E	350.0E	..
Portugal.....	206.0	227.0	183.0	174.0	159.0	158.0	40.0	20.0	0.0	0.0	..
Spain.....	137.0	96.0	161.0	107.0	80.0	29.0	159.0	100.0E	29.0	0.0E	..
United Kingdom...	1462.0	879.0	660.0	560.0	610.0	600.0E	580.0E	550.0E	575.0E	0.0E	..
EFTA.....	4476.0	3282.0	2298.0	2403.0	2861.0	2820.0	2855.0	2567.0	2650.0E	2350.0E	..
Austria.....	2321.0	1850.0	1304.0	1629.0	2096.0	2000.0E	2000.0E	2000.0E	2100.0E	1800.0E	..
Sweden.....	2155.0	1432.0	994.0	774.0	765.0	820.0	855.0	567.0	550.0	550.0E	..
SOUTH AFRICA.....	250.0	250.0	250.0	250.0E	250.0E	250.0E	250.0E	250.0E	250.0E	250.0E	..
ASIA.....	2931.0	2238.0	1826.0	1977.0	2302.0	2616.0	2145.0	2116.0	1980.0	1578.0E	..
Japan.....	2931.0	2238.0	1826.0	1977.0	2302.0	2616.0	2145.0	2116.0	1980.0	1578.0E	..
OCEANIA.....	80.0	110.0	152.0	145.0	141.0	116.0	99.0	205.0E	125.0E	135.0E	..
Australia.....	76.0	100.0	145.0	140.0	136.0	111.0	94.0	200.0E	120.0E	130.0E	..
New Zealand.....	4.0E	10.0E	7.0E	5.0E	5.0E	5.0E	5.0E	5.0E	5.0E	5.0E	..
DEVELOPING COUNTRIES AND TERRITORIES.....	2348.0	2897.0	2698.0	2318.0	2872.0	3453.0	2956.0	3196.0	2622.0	2573.0E	..
AMERICA.....	615.0E	540.0E	502.0	513.0	645.0	1155.0	739.0	996.0	792.0	723.0E	
Argentina.....	19.0	20.0	29.0	41.0	30.0E	28.0	25.0	65.0	30.0E	30.0E	..
Brazil.....	556.0	480.0	454.0	450.0	538.0	1048.0	672.0	867.0	753.0	688.0E	..
Mexico.....	40.0E	40.0E	19.0	22.0	77.0	79.0	42.0	64.0	9.0	5.0E	
ASIA.....	1733.0	2357.0	2196.0	1805.0	2227.0	2298.0	2217.0	2200.0	1830.0	1850.0E	..
India.....	299.0	459.0	454.0	250.0	157.0	250.0E	230.0	250.0E	250.0E	250.0E	..
Republic of Korea.	1434.0	1898.0	1742.0	1555.0	2070.0	2048.0	1987.0	1950.0	1580.0	1600.0E	..

Table 3 (continued)

CONSUMPTION OF TUNGSTEN IN ORES AND CONCENTRATES

(Metric tons of W content)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
SOCIALIST COUNTRIES OF EASTERN EUROPE...	19095.0E	18627.0E	19312.0E	19173.0E	18694.0E	17703.0E	18364.0E	18844.0E	18624.0E	18300.0E	..
Bulgaria.....	100.0E	100.0E	100.0E	100.0E	100.0E	100.0E	100.0E	100.0E	100.0E	100.0E	..
Czechoslovakia....	1300.0E	1300.0E	1300.0E	1300.0E	1300.0E	1300.0E	1300.0E	1300.0E	1300.0E	1300.0E	..
German Democratic Republic.....	300.0E	300.0E	300.0E	300.0E	300.0E	300.0E	300.0E	300.0E	300.0E	300.0E	..
Hungary.....	600.0E	600.0E	400.0E	400.0E	400.0E	400.0E	400.0E	400.0E	500.0E	500.0E	..
Poland.....	895.0	427.0	1312.0	1073.0	594.0	603.0	1264.0	744.0	424.0	100.0E	..
USSR.....	15900.0E	15900.0E	15900.0E	16000.0E	16000.0E	15000.0E	15000.0E	16000.0E	16000.0E	16000.0E	..
SOCIALIST COUNTRIES OF ASIA.....	6100.0E	6400.0E	5600.0E	5000.0E	6000.0E	7000.0E	7800.0E	8500.0E	8500.0E	8500.0E	..
China.....	4500.0E	4800.0E	4000.0E	4000.0E	5000.0E	6000.0E	7000.0E	8000.0E	8000.0E	8000.0E	..
Democratic Peoples Republic of Korea.	1600.0E	1600.0E	1600.0E	1000.0E	1000.0E	1000.0E	800.0E	500.0E	500.0E	500.0E	..

Sources: National statistics, questionnaires and data provided by delegations.
Note: E indicates estimates.

Table 4

VOLUME OF IMPORTS OF TUNGSTEN IN ORES AND CONCENTRATES

(Metric tons of W content)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
WORLD.....	28225.0	27432.0	22844.0	20956.0	26931.0	25134.0	21398.0	20963.0	25980.0	..	..
DEVELOPED MARKET ECONOMY COUNTRIES...	16662.0	14140.0	10353.0	9971.0	15820.0	12752.0	8636.0	9519.0	13784.0	..	..
AMERICA.....	5164.0	5345.0	3536.0	2873.0	5814.0	4755.0	2532.0	4436.0	8045.0	7300.0E	..
Canada.....	6.0	14.0	8.0	12.0	7.0	9.0	10.0	1.0	0.0	0.0E	..
United States.....	5158.0	5331.0	3528.0	2861.0	5807.0	4746.0	2522.0	4435.0	8045.0	7300.0E	..
EUROPE.....	9189.0	7303.0	5308.0	4995.0	8147.0	6084.0	4830.0	3728.0	3817.0	..	..
EEC.....	4864.0	4148.0	3086.0	2958.0	5598.0	3406.0	2425.0	2517.0	2711.0	..	..
Belgium-Lux.....	2.0	10.0	0.0	0.0	141.0	341.0	30.0	50.0E	50.0E	50.0E	..
France.....	813.0	664.0	467.0	157.0	400.0	201.0	103.0	22.0	0.0	0.0E	..
Germany,Federal Republic of.....	1576.0	1447.0	1541.0	2071.0	3934.0	2074.0	1720.0	1863.0	2220.0	2100.0E	..
Italy.....	89.0	61.0	27.0	27.0	78.0	92.0	80.0	86.0	100.0E	100.0E	..
Netherlands.....	877.0	261.0	369.0	315.0	547.0	353.0	172.0	307.0	330.0	..	..
United Kingdom...	1507.0	1705.0	682.0	388.0	498.0	345.0	320.0	189.0	11.0	0.0E	..
EFTA.....	4325.0	3155.0	2222.0	2037.0	2549.0	2678.0	2405.0	1211.0	1106.0	..	..
Austria.....	2321.0	1850.0	1304.0	1669.0	2110.0	2057.0	1675.0	1066.0	674.0	..	..
Sweden.....	2004.0	1305.0	918.0	368.0	439.0	621.0	730.0	145.0	409.0	..	..
Switzerland.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0	..	..
SOUTH AFRICA.....	325.0	206.0	200.0	261.0	203.0	279.0	265.0	250.0E	250.0E	..	..
ASIA.....	1984.0	1286.0	1309.0	1833.0	1656.0	1634.0	1007.0	1105.0	1671.0	..	..
Japan.....	1984.0	1286.0	1309.0	1833.0	1656.0	1634.0	1007.0	1105.0	1671.0	..	..
OCEANIA.....	0.0	0.0	0.0	9.0	..	0.0	2.0E	0.0	0.0	0.0E	..
Australia.....	0.0	0.0	0.0	9.0	..	0.0	2.0E	0.0	1.0	0.0E	..
DEVELOPING COUNTRIES AND TERRITORIES.....	1218.0	3615.0	2229.0	862.0	1467.0	3229.0	2948.0	1650.0	1622.0	..	..
AMERICA.....	42.0	0.0	0.0	0.0	24.0	11.0	5.0	122.0	71.0	..	..
Argentina.....	..	..	..	..	..	11.0	5.0	50.0	54.0E	15.0E	..
Brazil.....	42.0	0.0	0.0	0.0	24.0	0.0	0.0	72.0	17.0E	..	..
ASIA.....	1176.0	3615.0	2229.0	862.0	1443.0	3216.0	2943.0	1528.0	1551.0E	..	..
Hong Kong.....	219.0	2157.0	1162.0	0.0	26.0	2109.0	2013.0	709.0	731.0	..	..
India.....	248.0	450.0	552.0	224.0	149.0	220.0	250.0E	194.0	200.0	200.0E	..
Indonesia.....	0.0	0.0	0.0	0.0	0.0	0.0	15.0E	0.0	0.0	..	..
Malaysia.....	15.0E	15.0E	15.0E	15.0E	15.0E	11.0	29.0	20.0E	20.0E	..	
Singapore.....	694.0	993.0	500.0	623.0	1253.0	876.0	636.0	605.0	600.0E	..	..
EUROPE.....	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	..	..
Yugoslavia.....	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	..	..

Table 4 (continued)

VOLUME OF IMPORTS OF TUNGSTEN IN ORES AND CONCENTRATES

(Metric tons of W content)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
SOCIALIST COUNTRIES OF EASTERN EUROPE...	10345.0E	9677.0E	10262.0E	10123.0E	9644.0E	9153.0E	9814.0E	9794.0E	10574.0E	..	..
Bulgaria.....	100.0E	100.0E	100.0E	100.0E	100.0E	100.0E	100.0E	100.0E	100.0E	..	..
Czechoslovakia....	1250.0E	1250.0E	1250.0E	1250.0E	1250.0E	1250.0E	1250.0E	1250.0E	1250.0E	..	..
German Democratic Republic.....	300.0E	300.0E	300.0E	300.0E	300.0E	300.0E	300.0E	300.0E	300.0E	..	..
Hungary.....	600.0E	600.0E	400.0E	400.0E	400.0E	400.0E	400.0E	400.0E	500.0E	..	..
Poland.....	895.0	427.0	1312.0	1073.0	594.0	603.0	1264.0	744.0	424.0	540.0E	..
USSR.....	7200.0E	7000.0E	6900.0E	7000.0E	7000.0E	6500.0E	6500.0E	7000.0E	8000.0E	..	..

Sources: National statistics, questionnaires and data provided by delegations.
Note: E indicates estimates.

Table 5

VOLUME OF EXPORTS OF TUNGSTEN IN ORES AND CONCENTRATES

(Metric tons of W content)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
WORLD	31950.0	27886.0	25907.0	26246.0	26513.0	27079.0	23782.0	22923.0	23473.0	..	..
DEVELOPED MARKET ECONOMY COUNTRIES	10404.0	6837.0	7669.0	5265.0	8280.0	7885.0	4833.0	3137.0	3733.0	..	..
AMERICA	3820.0	1879.0	2905.0	301.0	3529.0	2923.0	1434.0	2.0	154.0	100.0E	..
Canada	2900.0	1800.0	2600.0	300.0	3400.0E	2800.0E	1400.0E	0.0	1.0	0.0E	..
United States	920.0	79.0	305.0	1.0	129.0	123.0	34.0	2.0	153.0	100.0E	..
EUROPE	3260.0	3153.0	3365.0	2825.0	2989.0	3158.0	2005.0	2004.0	2369.0	..	..
EEC	3082.0	2779.0	3148.0	2379.0	2705.0	3054.0	1730.0	1829.0	1961.0	..	..
Belgium-Lux	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0E	..
France	410.0	396.0	530.0	478.0	297.0	275.0	202.0	138.0	56.0	..	..
Germany, Federal Republic of	76.0	99.0	0.0	41.0	0.0	1.0	0.0	0.0	76.0	..	..
Italy	0.0	1.0	10.0	0.0	0.0	3.0	3.0	0.0	0.0E	0.0E	..
Netherlands	949.0	204.0	471.0	373.0	268.0	693.0	115.0	13.0	98.0	..	..
Portugal	1202.0	1381.0	994.0	978.0	1488.0	1540.0	872.0	1231.0	1431.0	1370.0E	..
Spain	319.0	345.0	395.0	390.0	489.0	433.0	446.0	115.0	51.0	80.0E	..
United Kingdom	126.0	353.0	743.0	119.0	163.0	109.0	92.0	332.0	249.0	..	..
EFTA	178.0	374.0	217.0	446.0	284.0	104.0	275.0	175.0	408.0	..	..
Austria	0.0	0.0	0.0	40.0	14.0	0.0	62.0	32.0	36.0	..	..
Sweden	178.0	374.0	217.0	406.0	270.0	104.0	213.0	143.0	372.0	..	..
SOUTH AFRICA	8.0	0.0	0.0	1.0	2.0	12.0	0.0	0.0	0.0	..	..
ASIA	0.0	17.0	5.0	51.0	0.0	0.0	0.0	0.0	0.0	0.0E	..
Japan	0.0	17.0	5.0	51.0	0.0	0.0	0.0	0.0	0.0	0.0E	..
OCEANIA	3316.0	1788.0	1394.0	2087.0	1760.0	1792.0	1394.0	1131.0	1210.0	1100.0E	..
Australia	3316.0	1788.0	1394.0	2087.0	1760.0	1792.0	1394.0	1131.0	1210.0	1100.0E	..
DEVELOPING COUNTRIES AND TERRITORIES	8556.0	8370.0	10177.0	6611.0	7020.0	6747.0	5283.0	6370.0	4625.0	..	..
AFRICA	698.0	460.0	527.0	304.0	343.0	237.0	48.0	26.0	26.0	..	..
Namibia	150.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0E	..
Rwanda	360.0E	288.0	321.0	227.0	264.0	205.0	15.0	0.0	0.0	0.0E	..
Uganda	18.0	18.0	18.0	18.0	20.0E	4.0	4.0	4.0	5.0E	..	..
Zaire	80.0	100.0	136.0	44.0	30.0	18.0	27.0	21.0	20.0E	..	..
Zimbabwe	90.0E	54.0E	52.0E	15.0E	29.0E	10.0E	2.0E	1.0E	1.0E	..	..
AMERICA	3820.0	3857.0	4637.0	3660.0	3365.0	2528.0	2009.0	2043.0E	1570.0	1922.0E	..
Argentina	2.0	0.0	0.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0E	..
Bolivia	2724.0	2451.0	2595.0	2050.0	1960.0	1304.0	1193.0	968.0	819.0	1015.0E	..
Brazil	361.0	769.0	1245.0	957.0	563.0	248.0	137.0	0.0	0.0	0.0E	..
Guatemala	0.0	0.0	40.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0E	..
Mexico	181.0	116.0	140.0	100.0	124.0	149.0	104.0	235.0	186.0	177.0E	..
Peru	552.0	521.0	617.0	535.0	718.0	818.0	575.0	840.0E	565.0	730.0E	..

Table 5 (continued)

VOLUME OF EXPORTS OF TUNGSTEN IN ORES AND CONCENTRATES

(Metric tons of W content)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
ASIA.....	4038.0	4053.0	5013.0	2647.0	3312.0	3982.0	3226.0	4301.0	3029.0	..	..
Hong Kong.....	219.0	1132.0	2443.0	0.0	0.0	953.0	1117.0	1903.0	1035.0	..	..
Malaysia.....	14.0	35.0	43.0	31.0	25.0	20.0	2.0	20.0E	0.0	0.0E	
Myanmar.....	476.0E	470.0	800.0	800.0	900.0E	950.0E	700.0E	500.0E	400.0E	400.0E	..
Republic of Korea.	1053.0	844.0	688.0	625.0	477.0	440.0	302.0	273.0	113.0	..	..
Singapore.....	368.0	500.0	324.0	451.0	873.0	865.0	376.0	601.0	600.0E	..	..
Thailand.....	1853.0	1037.0	712.0	588.0	893.0	589.0	513.0	654.0	581.0	668.0E	..
Turkey.....	55.0	35.0	3.0	152.0	144.0	165.0	216.0	350.0	300.0E	..	.
SOCIALIST COUNTRIES OF ASIA.....	12990.0E	12679.0E	8061.0E	14370.0E	11213.0E	12447.0E	13666.0E	13416.0E	15115.0E	..	..
China.....	10490.0	10379.0	5761.0	12870.0	9713.0	10947.0	12166.0	11916.0	13115.0	..	..
Democratic Peoples Republic of Korea.	1000.0E	800.0	800.0	0.0	0.0	0.0	0.0	0.0	0.0	..	..
Mongolia.....	1500.0E	1500.0E	1500.0E	1500.0E	1500.0E	1500.0E	1500.0E	1500.0E	2000.0E	..	..

Sources: National statistics, questionnaires and data provided by delegations.
Note: E indicates estimates.

Table 6

STOCKS OF TUNGSTEN IN ORES AND CONCENTRATES
(end of year)

(Metric tons of W content)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
PRODUCERS STOCKS											
Australia.....	360.0	552.0	507.0	385.0	306.0	379.0	481.0	435.0	416.0	800.0E	..
Bolivia.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	105.0	137.0E	..
Brazil.....	0.0	0.0	0.0	17.0	17.0	17.0	875.0	..	70.0	84.0E	..
France.....	26.0	43.0	139.0	159.0	76.0	85.0	205.0	65.0	0.0	0.0E	..
India.....	3.0	7.0	21.0	11.0	32.0	54.0	50.0E	50.0	57.0	55.0E	..
Japan.....	129.0	173.0	211.0	32.0	39.0	27.0	26.0	21.0	41.0	..	..
Mexico.....	..	..	7.0	12.0	18.0	20.0	95.0	8.0	19.0	26.0E	..
Peru.....	0.0	0.0	0.0	0.0	0.0	46.0	241.0	0.0	71.0	54.0E	..
Portugal.....	489.0	301.0	380.0	370.0	251.0R	305.0R	1042.0R	941.0E	970.0	970.0E	970.0E
Republic of Korea.	174.0	267.0	338.0	76.0	231.0	200.0E	44.0	45.0	45.0E	..	..
Rwanda.....	36.0	29.0	30.0	40.0E	48.0	0.0	0.0	0.0	0.0	..	..
Spain.....	..	..	..	75.0	114.0	84.0	50.0E	62.0	47.0	55.0E	..
Thailand.....	569.0	799.0	793.0	834.0	804.0	1029.0	1025.0	1100.0E	1295.0	1300.0E	..
Turkey.....	76.0	116.0	23.0	116.0	96.0	80.0E	145.0	43.0	0.0	..	..
United Kingdom....	..	102.0	73.0	0.0	0.0	0.0	0.0	0.0	0.0	..	..
United States.....	106.0	108.0	54.0	54.0	46.0	60.0	21.0	21.0	0.0	..	..
Sub-total.....	1968.0	2497.0	2576.0	2181.0	2078.0	2386.0	4300.0	2791.0	3136.0	3468.0	..
CONSUMERS STOCKS											
Argentina.....	..	..	9.0	..	..	0.0	0.0	0.0	0.0	..	..
Canada.....	..	..	..	..	..	0.0	0.0	255.0E	75.0	..	..
France.....	55.0	16.0	9.0	47.0	177.0	130.0	221.0	0.0	0.0	..	..
Japan.....	570.0	460.0	409.0	511.0	557.0	671.0	687.0	448.0	455.0	..	..
Portugal.....	36.0	24.0	3.0	5.0	3.0	10.0	1.0	0.0	1.0	..	..
Sweden.....	182.0	..	..	..	256.0	302.0	333.0	353.0	0.0	..	..
United States.....	601.0	672.0	1765.0	1085.0	959.0	1077.0	502.0	329.0	223.0	..	..
Sub-total.....	1444.0	1172.0	2195.0	1648.0	1952.0	2190.0	1744.0	1385.0	754.0	..	..
DEALERS STOCKS											
Argentina.....	41.0	43.0	23.0	11.0	9.0E	9.0E	0.0	0.0	0.0	..	..
Japan.....	7.0	7.0	0.0	11.0	0.0	1.0	0.0	0.0	0.0	..	..
Peru.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	9.0E	..
Thailand.....	436.0	379.0	530.0	462.0	339.0	113.0	116.0	120.0E	51.0	60.0E	..
Sub-total.....	484.0	429.0	553.0	484.0	348.0	123.0	116.0	120.0E	58.0	69.0	..
GOVERNMENTS STOCKS											
United States.....	40465.0	39508.0	39163.0	38904.0	37536.0	36842.0	36333.0	35625.0	35100.0	..	..
Sub-total.....	40465.0	39508.0	39163.0	38904.0	37536.0	36842.0	36333.0	35625.0	35100.0	..	..

Sources: National statistics, questionnaires and data provided by delegations.
Notes: E Indicates estimates.
R Indicates revised data.

Annex III

DEFINITION OF CAPACITY

Capacity definition currently being used by the United States Bureau of Mines in preparing the Tungsten section of their Minerals Yearbook a/

"The data shown are rated capacity for mines and mills. Rated capacity is defined as the maximum quantity of product that can be produced in a period of time on a normally sustainable long term operating rate, based on the physical equipment of the plant, and given acceptable routine operating procedures involving labor, energy, materials, and maintenance. Capacity includes both operating plants and plants temporarily closed that in the judgement of the author can be brought into production within a short period of time with minimum capital expenditure.

Mine capacity for tungsten is based on published reports, maximum production statistics and estimates. The latter is utilized particularly for the centrally planned economy countries where capacity information is either incomplete or unavailable."

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a/ Provided by the representative of the United States (see para. 22 above).

Annex IV

DRAFT QUESTIONNAIRE

for the Committee on Tungsten to conduct a review of existing research and development programmes to promote new applications for tungsten and a survey of industry and government views on the need for additional programmes

Question 1

Is your company or organization involved (a) independently or (b) jointly in any research and development projects to promote new applications of tungsten?

Question 2

(a) If it is involved in any such projects, please indicate:

(i) The number of projects;

(ii) The application of tungsten concerned;

(iii) The time horizon of each project;

(iv) The size of the project in terms of research staff and budgetary resources.

(b) What proportion of the company's or organization's revenue related to tungsten products is devoted to a research programme?

(c) Are you conducting any research projects which could lead to substitution of tungsten by other materials? If so, please provide responses to questions (a) and (b) above for such projects.

Question 3

Do you believe there is a need for additional research and development programmes for the promotion of tungsten in industrial applications? Please elaborate on your answer as appropriate.

Question 4

Would you favour co-operative international research and development programmes for tungsten? If yes, please comment as appropriate on the conditions required to make such programmes feasible and attractive.

Question 5

Do you believe your company or organization will change the focus or level of research and development investments related to tungsten in the future? If you do, please elaborate as appropriate.